VOLUME 79 SEPARATE No. 356

PROCEEDINGS

AMERICAN SOCIETY
OF
CIVIL ENGINEERS

NOVEMBER, 1953

THE DEVELOPMENT OF THE PULP AND PAPER INDUSTRY IN THE SOUTH

by A. G. Wakeman

CONSTRUCTION DIVISION

{Discussion open until March 1, 1954}

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Printed in the United States of America

Headquarters of the Society
33 W. 39th St.
New York 18, N. Y.

PRICE $0.50 PER COPY

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This paper was published at 1745 S. State Street, Ann Arbor, Mich., by the American Society of Civil Engineers. Editorial and General Offices are at 33 West Thirty-ninth Street, New York 18, N. Y.

THE DEVELOPMENT OF THE PULP AND PAPER INDUSTRY IN THE SOUTH

A. G. Wakeman

In the past twenty-five years the United States has seen the pulp and paper industry double in size, not only in tons produced, but also in dollar volume. It is now about a five billion dollar a year industry.

A few years ago the South made practically no pulp and paper. Today we find that about one-half of all the pulp and paper made in the United States is being made in ten of the southern states.

The South has had the greatest industrial revolution the world has ever seen and now the five leading industries down here are:

TEXTILES
METALS
CHEMICALS
LUMBER
PULP AND PAPER

The pulp and paper industry has made a spectacular rise from a modest beginning 25 years ago to a position of fifth place in the industries of the South.

It is interesting to note that the five leading industries all come from the wealth of natural resources in the South:

THE FARM
THE MINE
THE FORESTS

You ask, why did the paper industry take so long to find that they could use southern pine? Well, it just happens that it was not until the last few years that chemists have found out how to utilize the southern pine to its fullest advantage. The so-called "Kraft Process" of making paper was originally discovered in a Swedish mill some years ago. The men at the Munksjo Mill at Jonkoping, Sweden, using the old soda-cook process were trying different types of cooks and they came out with a great bunch of missmash. Upon testing this pulp, they found that the strength was about 25% higher than they had made with the old process. That's why they called it "Kraft", which means "strong" in Swedish.

The first mill built in this country to use this process was a very small operation of only five tons a day, compared to a modern mill that must be about 300 to 500 tons per day to be economically sound. It was not until along about 1920 to 1925 that the process became perfected enough to encourage and attract venture capital to build these big mills you see down here now. The discovery of the Kraft process was the start of the industry that has grown so rapidly in the South, because the southern pine lends itself beautifully to making a strong pulp by this process. Paper or board can be made equally well from any of the four predominating species of pine in the South; Long leaf, Short leaf, Loblolly, and Slash.

This paper industry is going ahead by leaps and bounds. The recent report of the President's "Material Policy Commission", better known as the "Paley Report", takes a long range look at our natural resources and future needs. The forest products were studied rather intensively in this report. The projection shows that the pulp and paper industry will have to practically double by 1975. Two other independent surveys; one by an association and the other by the National Industrial Conference Board, predict about the same growth. If you just take the Census Bureau's statistics of births expected in the next 25 years and then hold paper consumption per person as it is now, you come out with approximately the same result.

This consumption per-person figure is worth a comment right here. The United States last year used 391.5#/person/year,

Sweden	used	154
Greece	used	9.8
Mexico	used	11.45
Venezuela	used	13.9
Russia	used	13.2

So, you see, the whole world is in desperate need of paper. Where are we going to get all this production that these surveys show will be needed? The South is one of the spots in the U.S.A. where some of this increase will probably come from.

So far the most economical raw material to use in making paper is wood. You can make good papers out of almost anything that grows and has cellulose in it; such as corn stalks, straw, bamboo, sugar cane, esparta grass, etc. The Forest Products Laboratory at Madison, Wisconsin can give you formulas for making paper out of over 800 different kinds of weeds, grasses, and trees, if you want them.

The latest raw material is Florida saw-grass which grows in abundance in the Everglades. You can make a good sheet of pulp out of the grass, but it is just a matter of economics whether or not it can be produced cheaply enough to compete with wood grown in the South.

The same problems hold true with bagasse (the residue left from the sugar cane industry). A good sheet of paper can be made from this waste material but the problem has always been - can it compete?

These problems are not new. A corn stalk mill, a mill to make pulp from saw-grass, and another using bagasse have all been built, but so far they have not proved economically sound and the ventures have folded up for one reason or another.

More mills will be built in the South in the future, either to use wood or some other product. Mills will some day be built in such remote places as Alaska where there is timber, but up to now no venture capital was ever attracted to these spots.

New developments in the handling of the waste from a mill are going to open up possibilities for locations that were never considered before. The National Council for Stream Improvement has carried on extensive research work and now have pilot plants opening which show great improvement over the old methods of handling the effluent from the mills. The main advantage, as I see it, is that these developments will open up sites that could never be considered before due to the stream pollution problem.

The paper industry is one of the high-cost industries per person employed or per ton of product. A mill will cost about $70,000 for every man or woman employed in it; and if you want it on a ton of product per day basis, it is about

$100,000. Compare this with automobiles, textiles, steel, rubber, chemicals, or any other industry with which you are familiar and you will see that paper is near the top or above most industries in such comparison.

In the construction end of it, there is nothing unusual about building a pulp and paper mill that any large contractor cannot handle. It takes about a year and a half to build a mill from the time you break ground. At the peak of the work load, the contractor will have from 1500 to 2000 men on his payroll. The problems are not too different than for any project that spends 30, 40, or 50 million dollars for a plant.

Due to the high speeds the machinery attains and the heavy loads, the buildings, from the foundation up, are massive. A good foundation is necessary, but from an engineering standpoint there is nothing beyond the ability of any of the topnotch foundation companies.

The designer is the one who plays the really important part in whether or not you get a good mill. Some pulp and paper companies do most of the design work themselves and know exactly what they want. Personal ideas of the designers, engineers and operators who are consulted, enter into what you finally end up with. For example, some operators like open sewers - others closed. You find differences in opinions as to the little details, such as pitch on the floors and the amount of space around the equipment. Some engineering firms design tight mills and others are all for plenty of room around the machinery.

An experienced man can walk through a pulp and paper mill and tell who the designer was. Each one has certain characteristics the same as an automobile designed by General Motors will differ from a Chrysler design.

Right along this line, it is interesting to note that every mill built in the U.S.A. of any consequence since the War has been built by an existing company. No group outside of the pulp and paper crowd, in other words, has just gotten together and said, "Let's build a pulp and paper mill; it looks like a good venture". One reason for this, of course, is that it takes 50 to 60 million dollars to get in the business even in a modest way if you want to build an integrated operation.

It is not like, for instance, the textile industry where one with some know-how can pick up a few looms and get started in business in a small way. Another reason is that under our existing tax laws the only large surplus of money available to use as capital comes from the surplus of large existing companies.

Summing up the situation as I see it today, there is going to be a demand for more and more paper and paper products of all kinds in the years ahead. Some of the mills of the future will be built in places that were never considered economically worth while even to investigate years ago. Due to necessity and to technical advances, these sites now become attractive.

In my opinion, the engineering firms doing the work for the pulp and paper mills, and the construction companies, are still going to be in business building mills.

The southern states, with their great natural resources, are going to be one location that will be considered for expansion.